



# Introduction to

**T**echnological innovations, an aging population, and business advances will change the types of goods and services that we need. These developments will also change the types of jobs that will be needed to produce those goods and services. We can expect more healthcare services to be provided, for example, and more healthcare workers to be hired. We can expect increases in educational services, requiring more teachers and other workers. And we can expect continued increases in computer-related production and employment.

Such examples are merely highlights from the projections produced by the U.S. Bureau of Labor Statistics (BLS).

# the projections



These projections can help you to glimpse the future—and to plan for it.

Because of the dynamic nature of the U.S. economy, it is essential that the best and latest information is made available to individuals who are making decisions about education, training, and careers. This special issue of the *Occupational Outlook Quarterly* provides a graphic summary of the latest employment projections, those covering the decade from 2004 to 2014. Updated every 2 years, these projections continue a nearly 60-year tradition of providing advice to people who are entering the job market, changing careers, or making education and training choices.

The BLS projections program was first created to assist World War II veterans in reentering the world of work. What began as simple descriptive material about available occupations now uses a model-based approach to provide projections of occupational employment growth, industry employment and output, the overall economy, and the labor force.

The charts on the pages that follow provide an overview of BLS' major findings in each of these areas.

## How we develop the BLS projections

BLS economists in the Office of Occupational Statistics and Employment Projections develop the projections in a number of steps. We begin with a view of how the U.S. economy will grow over the next 10 years. We create a model of an economy that is operating at potential—with strong output growth, strong labor productivity, and relatively low unemployment rates—in the long term.

Using this framework, we estimate the production levels of U.S. industries: their total output of goods and services. Some of this output is used by other industries; for example, steel is used in making cars. Other output is sold directly to customers. Either way, the production of goods and provision of services create the need for workers.

After projecting the amount of various goods and services that will be demanded, we project the number of jobs that will be needed in the industries that provide those goods and services.

Knowing the size of the labor pool is another essen-

tial part of our projections because the number of workers available helps to determine the total number of jobs in the economy. To estimate the future size of the labor force, we use projections of population change from the U.S. Census Bureau and combine them with our own estimates of how much of the population will be employed, based on historical trends.

As important as knowing the size of the labor force is knowing how it will be used. The mix of occupations that will be in demand is determined both by the amount of goods and services produced and by the ways in which industries produce them.

The provision of library services, for example, requires librarians, but it also requires an increasing number of library technicians and computer specialists. The growth of these other occupations has been due, in part, to automation and the growing importance of the Internet as a research tool.

Many occupations are closely tied to the changing fortunes of particular industries. For example, in 2004, 50 percent of registered nurses worked in private hospitals. So any increase in the demand for hospital service will increase the need for that occupation. We project that, between 2004 and 2014, the real output of private hospitals will increase 3.5 percent a year. Because more nurses will be needed to provide this output, hospitals are projected to account for 43 percent of a 703,000-job increase in the employment of registered nurses.

In developing projections of occupational employment trends, we make extensive use of the BLS Occupational Employment Statistics survey. This survey shows the employment levels of more than 700 occupations in nearly 300 industries and industry groupings.

We invite readers to examine our detailed profiles of occupations in the 2006-07 *Occupational Outlook Handbook* and of industries in the 2006-07 *Career Guide to Industries*. (For details about these and related publications, see “Other BLS publications presenting information on the 2004-14 projections,” page 7.)

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## Charting the projections

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The charts in this issue express two concepts about employment: Changes in levels and changes in the rates of growth or decline. Some occupations will have large changes in both. For example, we project that employ-

ment of computer applications software engineers will increase by 48 percent, or about 222,000 jobs, over the 2004-14 decade.

In other cases, occupations that are relatively large may have slower rates of growth (percentage changes) than do occupations that are smaller—but the numeric increase in the employment levels of these larger occupations will be much bigger. For example, in 2004 there were about 1,349,000 carpenters and 62,000 physician assistants. Between 2004 and 2014, employment of physician assistants is projected to grow almost 4 times as fast as carpenters: 50 percent compared with 14 percent. However, carpenters are projected to gain 6 times as many new jobs—186,000 compared with 31,000—because their 2004 employment level was much larger than that of physician assistants. (See sidebar.)

Another important concept in understanding these charts is grasping the difference between employment change and total job openings. Between 2004 and 2014, total employment is projected to increase by about 13 percent for a net employment growth of 18.9 million jobs. However, we estimate that there will be 54.7 million total job openings during the same decade for workers new to their occupation. These openings reflect both the increase in jobs and the need to replace the millions of workers expected to permanently leave growing occupations.

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## Highlights of the 2004-14 projections

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The 2004-14 projections, which are explored in detail in the November 2005 issue of the *Monthly Labor Review*, provide information on projected trends in occupational employment, industry output and employment, the overall economy, and the labor force. Highlights include:

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### Occupational employment

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- Total employment is projected to reach 165 million jobs by 2014, reflecting an increase of about 19 million new jobs between 2004 and 2014. (See page 11.)
- Among occupational groups, the professional and related occupations group, followed by services, is expected to increase the fastest and add the most jobs. (See page 12.)

- Healthcare practitioner and technical occupations are projected to increase by nearly 1.8 million jobs. Education, training, and library occupations are projected to increase by about 1.7 million. (See page 15.)

- Nearly all of the 20 fastest growing occupations are related to healthcare or computers, including home health aides and network systems and data communications analysts, which top the list. This growth reflects increased demand for medicine by an aging population and increased purchases of computer services and software. (See page 16.)

- Retail salespersons and registered nurses are expected to gain the most new jobs—more than 700,000 each. (See page 17.)

- Nearly every education and training category is expected to include high-growth, high-pay occupations. (See pages 18-25.)

- As in past years, most job openings for workers entering an occupation are expected to come from the need to replace other workers, rather than from the need to fill newly created jobs. The 20 occupations expected to have the most openings include sales, education, healthcare, and other occupations. (See pages 27 and 28.)

## Industry employment

- Job growth over the 2004-14 decade is projected to be concentrated in service-providing industry sectors. The wholesale and retail trade sector accounted for about 16 percent of wage-and-salary employment in 2004—or about 20.7 million jobs. (See pages 32 and 33.)

- The professional and business services sector and the healthcare and social assistance sector are projected to gain the most new jobs and at the fastest rate. (See pages 34 and 35.)

- Among goods-producing industries, construction is projected to gain about 792,000 jobs. Employment in manufacturing is expected to decline slightly. (See pages 34 and 35.)

- More than half of the 20 industries projected to grow fastest and about half of the 20 projected to gain the most new jobs relate to education, healthcare, or the support of the elderly or disabled. Business-related industries—such as employment services and the management, scientific, and technical consulting services—also made these lists. (See pages 36 and 37.)

## Economic growth

- Gross domestic product (GDP), which measures the final demand for all goods and services in the economy, is projected to grow by an annual rate of 3.1 percent. (See page 42.)

- Personal consumption expenditures are projected to continue to account for more than two-thirds of GDP. (See page 42.)

- Gross private domestic investment (residential construction and purchases by businesses) and exports are expected to continue growing fast, with an average annual growth rate of 4.7 and 6.7 percent, respectively. (See page 42.)

- The goods components of consumer expenditures are projected to grow by an average of 2.6 percent a year between 2004 and 2014. Purchases of computers and software are projected to grow 20 percent a year. (See page 44.)

- The services components of personal consumption expenditures are projected to increase by 2.9 percent annually. Growth will be driven, in part, by an increase in medical care and insurance services. (See page 43.)

## Labor force

- By 2014, the number of persons working or looking for work is expected to reach 162 million. The labor force is projected to add slightly fewer workers than it did over the last decade. (See page 47.)

- As the baby-boom generation ages, the number of people in the labor force aged 55 to 64 years old is projected to grow by 42 percent, more than 4 times the average for all age groups. The number of labor force participants aged 65 and older is expected to grow by 74 percent. (See page 48.)

- The women's labor force participation rate continues to edge upward. Nearly 60 percent of women are expected to be in the labor force by 2014. The number of women in the labor force is projected to increase by 7.5 million during the projections decade. (See page 49.)

- Because of higher birth rates relative to other groups and increased immigration, the number of Hispanics in the labor force is projected to increase by 34 percent. (See page 52.)

## Two views of employment growth

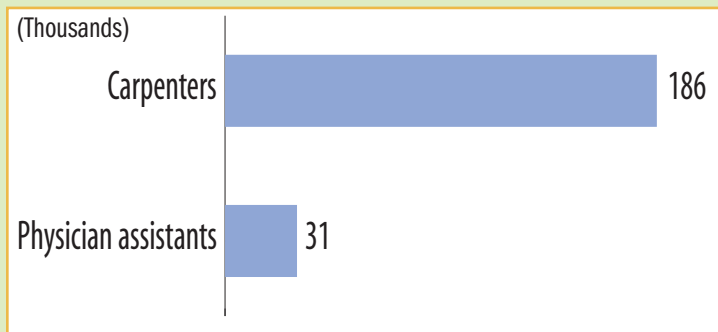
Employment growth or decline is measured in two ways: numeric change and percent change. Numeric change is the actual number of jobs gained or lost over the projections decade. Percent change is the rate of job growth or decline during the decade.

The charts show the projected increase in employment for carpenters compared with that for physician

assistants. In numeric terms, as shown in the upper chart, more than 6 times as many new jobs are projected for carpenters as for physician assistants between 2004 and 2014.

Percent change tells a different story. As the lower chart shows, employment of physician assistants is expected to grow about 4 times as fast as that of carpenters.

Numeric employment growth in two occupations, projected 2004-14



Percent employment growth in two occupations, projected 2004-14

